

## **Standoff Detection of Highly Enriched Uranium**

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The official link for this solicitation is:

<http://www.acq.osd.mil/osbp/sbir/solicitations/sbir20152/index.shtml>

Agency:  
Department of Defense

Release Date:  
April 24, 2015  
Branch:  
n/a

Open Date:  
April 24, 2015  
Program / Phase / Year:  
SBIR / Phase I / 2015

Application Due Date:  
June 24, 2015

Solicitation:  
[DoD 2015.2 SBIR Solicitation](#)

Close Date:  
June 24, 2015  
Topic Number:  
DTRA152-008

### **Description:**

Within the Federal and State governments there are several select agencies whose mission is to detect the presence of highly enriched uranium without revealing the search activity or the means of detection. The most challenging task is detection from an undisclosed survey vehicle moving at no more than typical urban speeds. The commercial applications for this product would be fall out for DOD requirement in various size weight and power configurations. The end users would be nuclear power plant operators and first responder organizations with hazardous material response missions. The market would be for standoff detection of reactor materials that are loose as a result of a reactor mishap. General requirements include: a. The detector cannot be visible to the surrounding public; b. The detector must fit within a compact vehicle and not larger than 43 liters in volume and 45 kg in total weight and may be powered by the vehicle electrical system c. Detector data must include the time date and location of the detection with such data communicated to the search personnel operating the SUV d. Detector must be capable of operating continuously for not less than 12 hours. PHASE I: 1) Model alternative detector approaches to identify the detector media, algorithms, supporting software and hardware meet the requirement. 2) Design and model bread board level systems that can be tested against surrogate material at the distances and speeds required. 3) Select the alternative approach capable of meeting the speed and distance detection of the target uranium sources. PHASE II: 1) Build a bread board level design and test against surrogate material at the distances and speeds required. 2) Refine the bread board system to a prototype design. 3) Construct and prototype capable of meeting the speed and distance detection of the target uranium

sources and test to show it meets performance requirements. PHASE III: A compact, mobile detection system would be of utility to Federal and State agencies responsible for detecting HEU. This dual use technology applies to both military and civilian detection requirements.